AD-A146 494 AN ARCHAEOLOGICAL SAMPLE SURVEY OF THE ALAMO RESERVOIR MOHAVE AND YUMA CO. (U) ARIZONA STATE UNIV TEMPE OFFICE OF CULTURAL RESOURCE MANAGEME... C L STONE SEP 77 1/1

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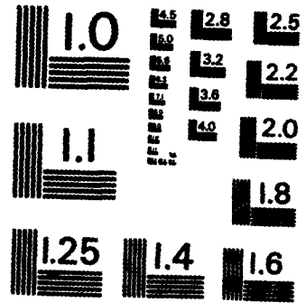

AN ARCHAEOLOGICAL SAMPLE SURVEY

OF THE ALAMO RESERVOIR

MOHAVE AND YUMA COUNTIES, ARIZONA

by

Connie L. Stone

APPENDIX

Recommendations for Future Research

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TABLE OF CONTENTS

LIST OF FIGURES

RECOMMENDATIONS FOR FUTURE SITE INVESTIGATIONS

Recommendations for future site investigations are based upon the nature of the archaeological materials found at each site and upon an assessment of the efficient and comprehensive means of obtaining archaeological data from each site. Recommendations will be made for all sites except AZ M:11:1 (ASU), which is outside the boundary of Corps property. Detailed site descriptions will not be repeated here; one may refer to site descriptions in the main body of the report. Site locations are given in Fig. A-1.

AZ M:10:1 (ASU)

Location: T.11N, R.13W, SW¼ of NE¼ of Section 36. The site is located in the SE portion of the ¼ x ¼ section, on the west side of Cholla Road (Fig. A-2).

Azimuths: N8°W to Artillery Peak
N18°E to Santa Maria Peak
N86.5°W to Williams Pt.

Area: 1500 m^2

This site constitutes one of the smaller lithic scatters found in the survey area. There is no evidence of features. Complete surface collection is recommended, utilizing a superimposed grid system of 2 x 2 m squares. Site topography should be mapped, along with the locations of any artifact concentrations.

AZ M:10:2 (ASU)

Location: T.11N, R.13W, SW¼ of NE¼ of Section 36. The site is located in the NE portion of the ¼ x ¼ section, east of Cholla Road (Fig. A-2).

Azimuths: N8°W to Artillery Peak
N19°E to Santa Maria Peak
Due west to Williams Pt.

Area: 535 m^2

This site is another of the relatively small lithic scatters found in the project area. There is no evidence of features. Recommendations are thus similar to those made for site AZ M:10:1 (ASU), including surface collection of the site with the utilization of a grid system of 2 x 2 m squares and mapping of site topography and artifact densities.

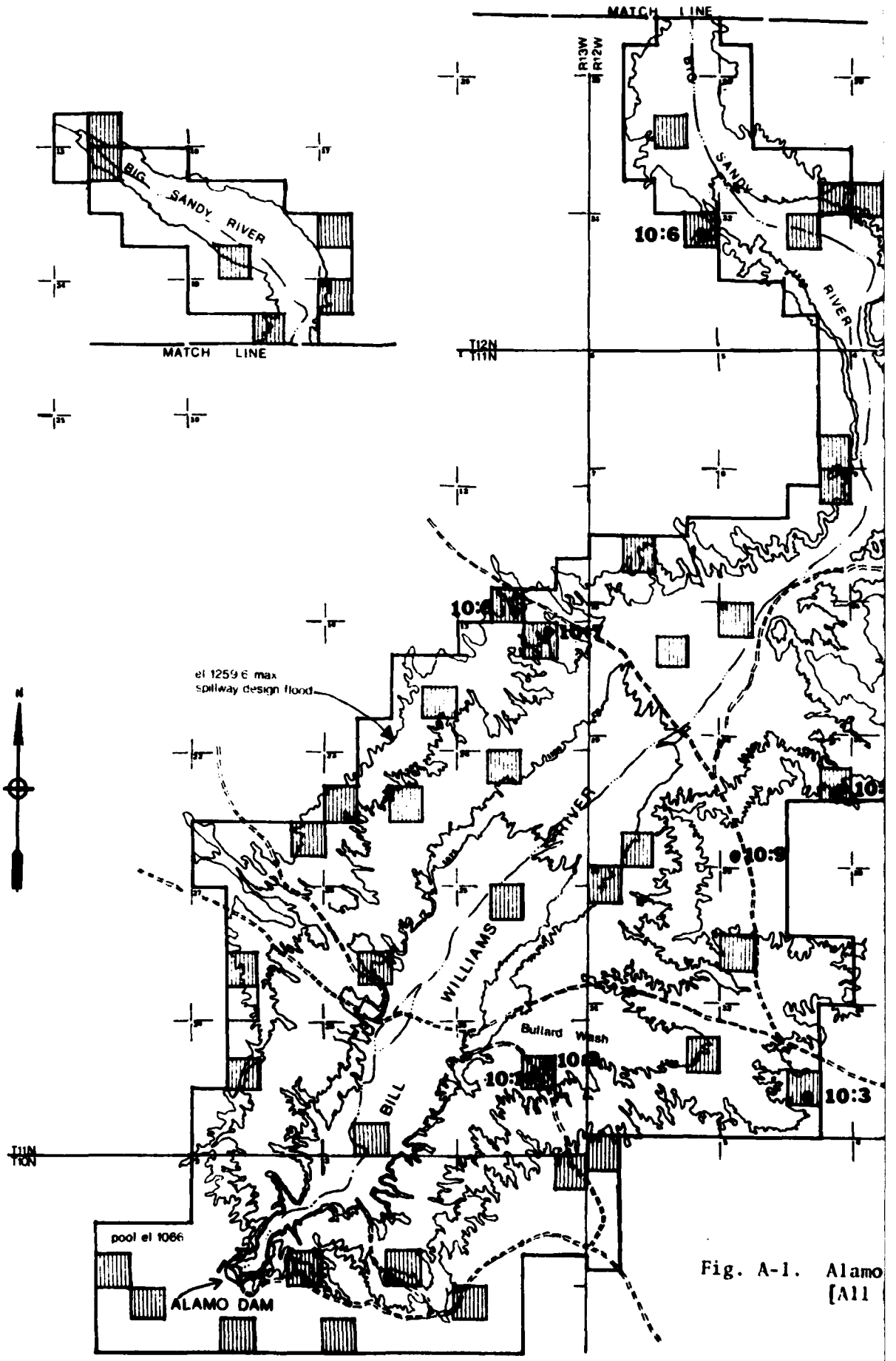

Fig. A-1. Alamo
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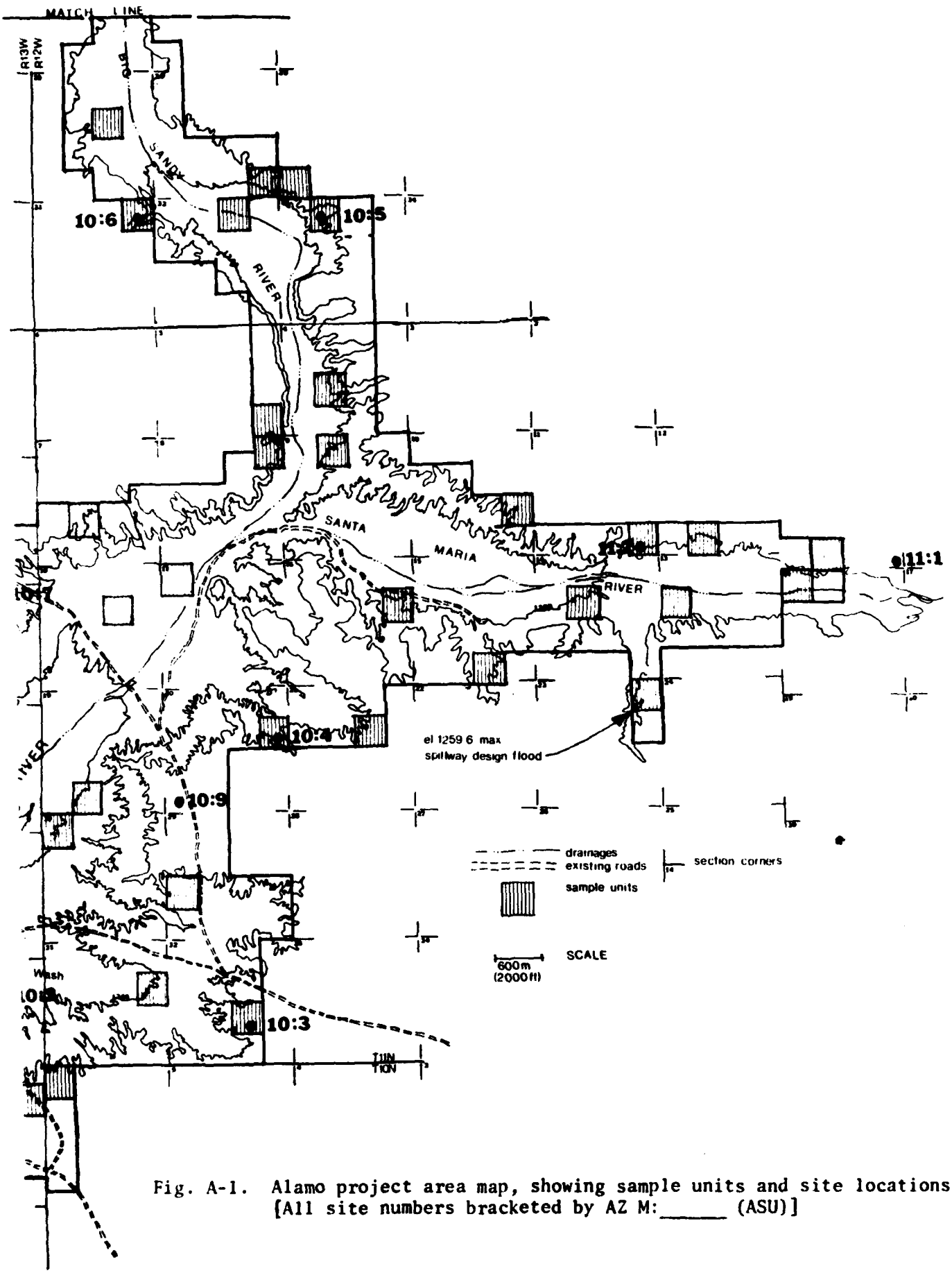

Fig. A-1. Alamo project area map, showing sample units and site locations. [All site numbers bracketed by AZ M:_____ (ASU)]

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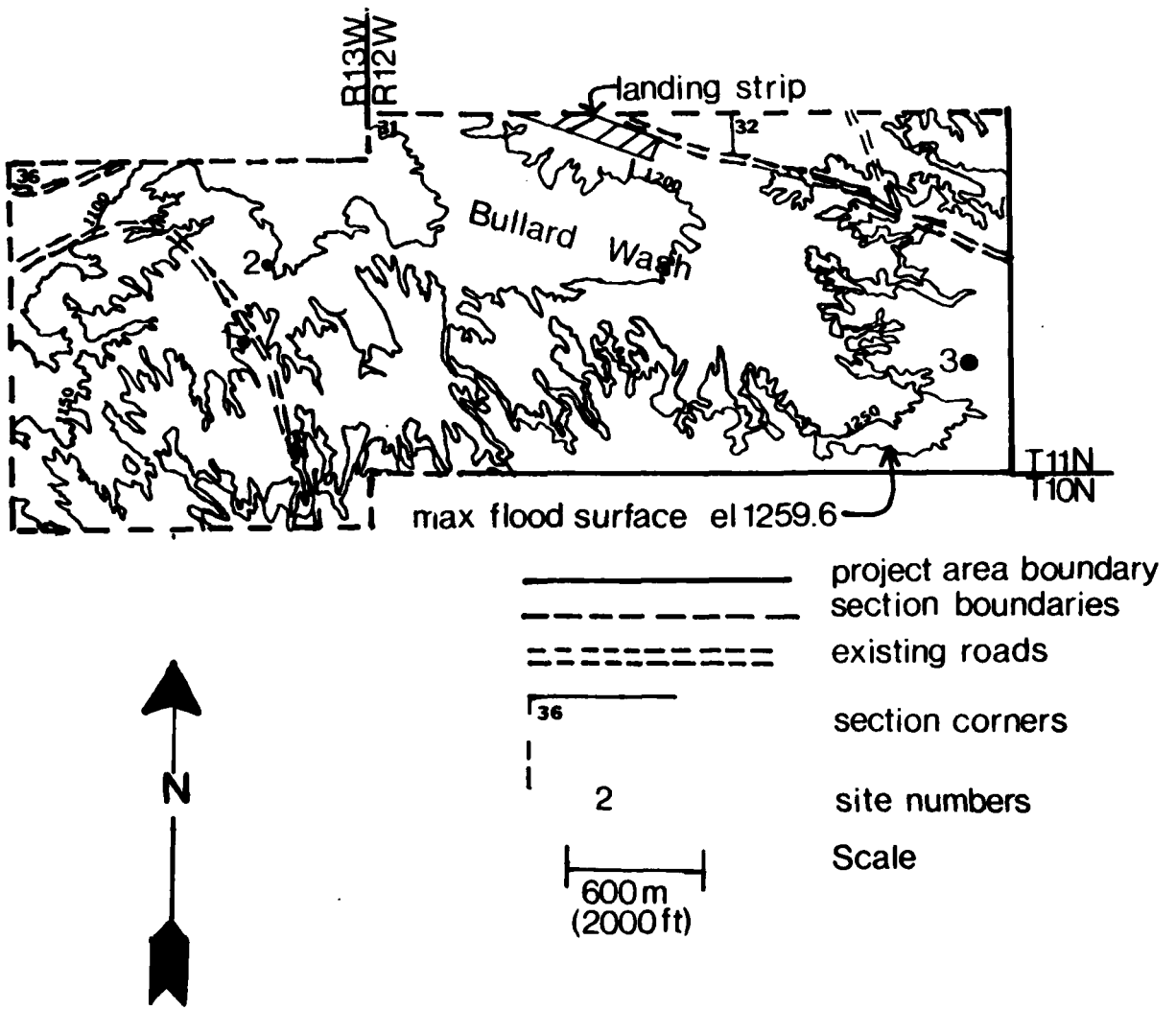

Fig. A-2. Locations of AZ M:10:1, 2, and 3 (ASU).

AZ M:10:3 (ASU)

Location: T.11N, R.12W, NW¼ of SE¼ of Section 32. The site is located in the SE portion of the ¼ x ¼ section, west of a fence line (Fig. A-2).

Azimuths: N21°W to Artillery Peak
N1°W to Santa Maria Peak
N86°W to Williams Pt.

Area: 3900 m^2

This is the gravel pictograph or intaglio site; other features associated with the gravel design include a rock alignment, a possible prehistoric trail, and a disturbed mound containing 2 apparently superimposed rock rings. Detailed mapping of the site should be the primary investigative technique. The site should also be extensively photographed. Test excavations should be conducted in the vicinity of the mound and rock alignment, to further ascertain the nature of these features. Controlled surface collection should also be conducted; since artifactual remains are sparse, larger 5 x 5 m square grid units could be established for collection.

AZ M:10:4 (ASU)

Location: T.11N, R.12W, SE¼ of NE¼ of Section 20. The site covers roughly all of the ¼ x ¼ section except for its NE corner. It also extends into the SW¼ of the NE¼ of Section 20. Outside of the Corps property line, the site extends south into the NW¼ and NE¼ of the SE¼ of Section 20 (Fig. A-3).

Azimuths: N27°W to Artillery Peak
N5.5°W to Santa Maria Peak

Area: The total site area probably exceeds 32.8 hectares (80 acres). The site area located on Corps property equals approximately 16.4 hectares (40 acres).

The immense size of this site necessitates the use of probabilistic sampling techniques for further investigations. Controlled surface collection should be conducted within a 5% to 10% random sample of the site area located within Corps boundaries. Limited, controlled test excavations should be conducted in order to determine the average depth of cultural remains. Although no indications of subsurface features were noted, artifact density is high, and artifacts are often found deeply embedded in the ground surface. Site topographical features should be mapped.

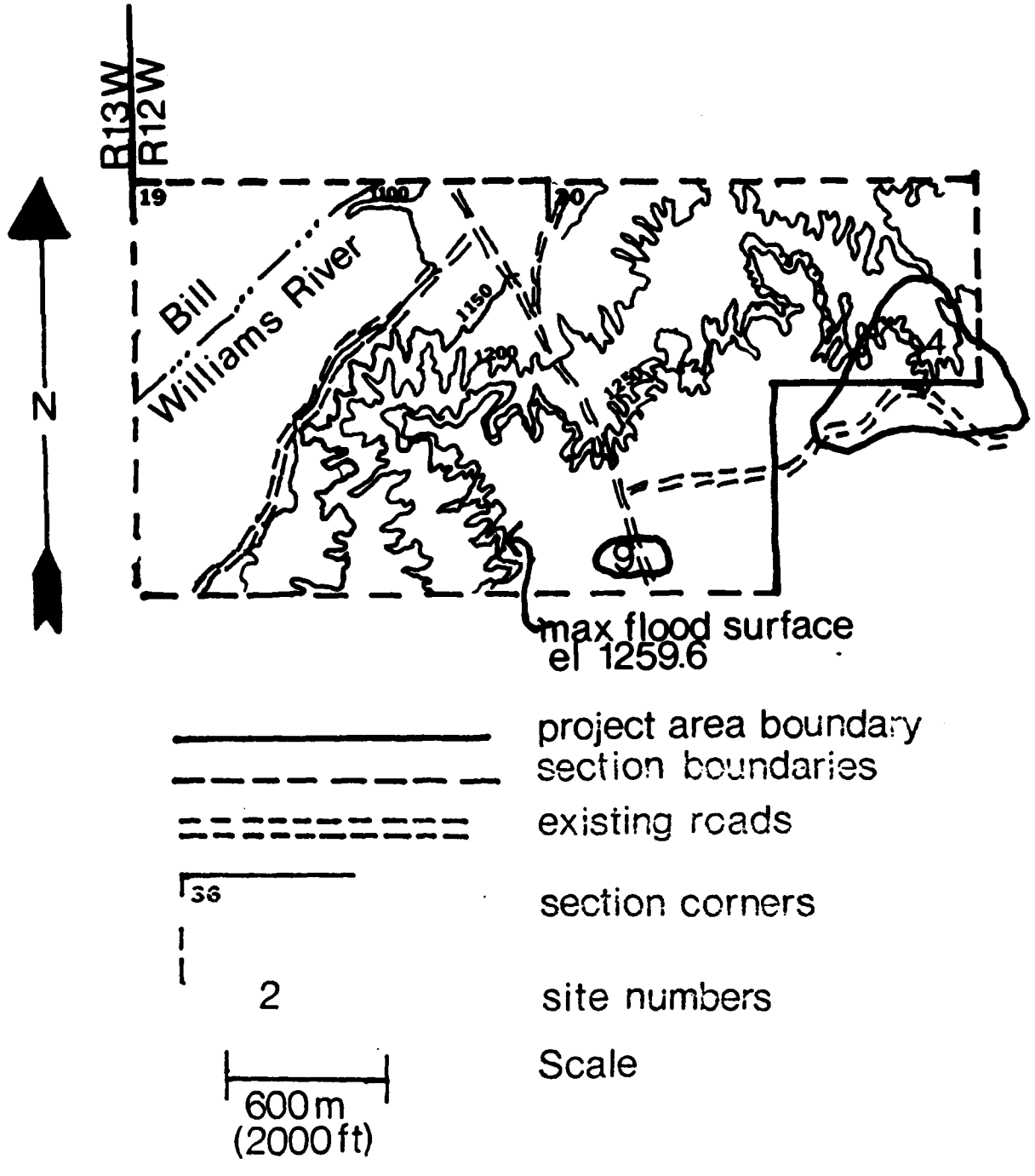

Fig. A-3. Locations of AZ M:10:4 and 9 (ASU).

AZ M:10:5 (ASU)

Location: T.12N, R.12W, NE¼ of NW¼ of Section 33. The site is located in the center of the ¼ x ¼ section, east of the Big Sandy River floodplain (Fig. A-4).

Azimuths: S43°W to Santa Maria Peak
N67°W to Artillery Peak

Area: 2700 m^2

Investigation of this site should involve controlled surface collection of artifacts within a probabilistic random sample of the site area. Although there is no indication of the presence of subsurface features, artifact density is again high, and artifacts tend to be deeply embedded in the ground surface. Limited test excavations could indicate the depth of cultural remains. The site should also be mapped.

AZ M:10:6 (ASU)

Location: T.21N, R.12W, NE¼ of NE¼ of Section 31. The site is located in the northern half of the ¼ x ¼ section, just west of the Big Sandy River floodplain (Fig. A-4).

Azimuths: N56.5°W to Artillery Peak
S28°E to Santa Maria Peak

Area: 50,000 m^2

Investigations should involve site mapping and controlled surface collection of artifacts within a probabilistic random sample of the site-area. Although no indications of subsurface remains were noted, the association of a partially caved-in rockshelter with the artifactual remains is conspicuous. Test excavations should be conducted within the remaining sheltered portion and along the margins of the rockshelter.

AZ M:10:7 (ASU)

Location: T.11N, R.13W, NW¼ and NE¼ of NE¼ of Section 13. The site extends along the boundary between the 2 ¼ x ¼ sections, near the intersection of Alamo Road and a road leading to Love's Camp (Fig. A-5).

Azimuths: N39.5°E to Santa Maria Peak
S26°W to eastern edge of Alamo Dam

Area: 40,000 m^2

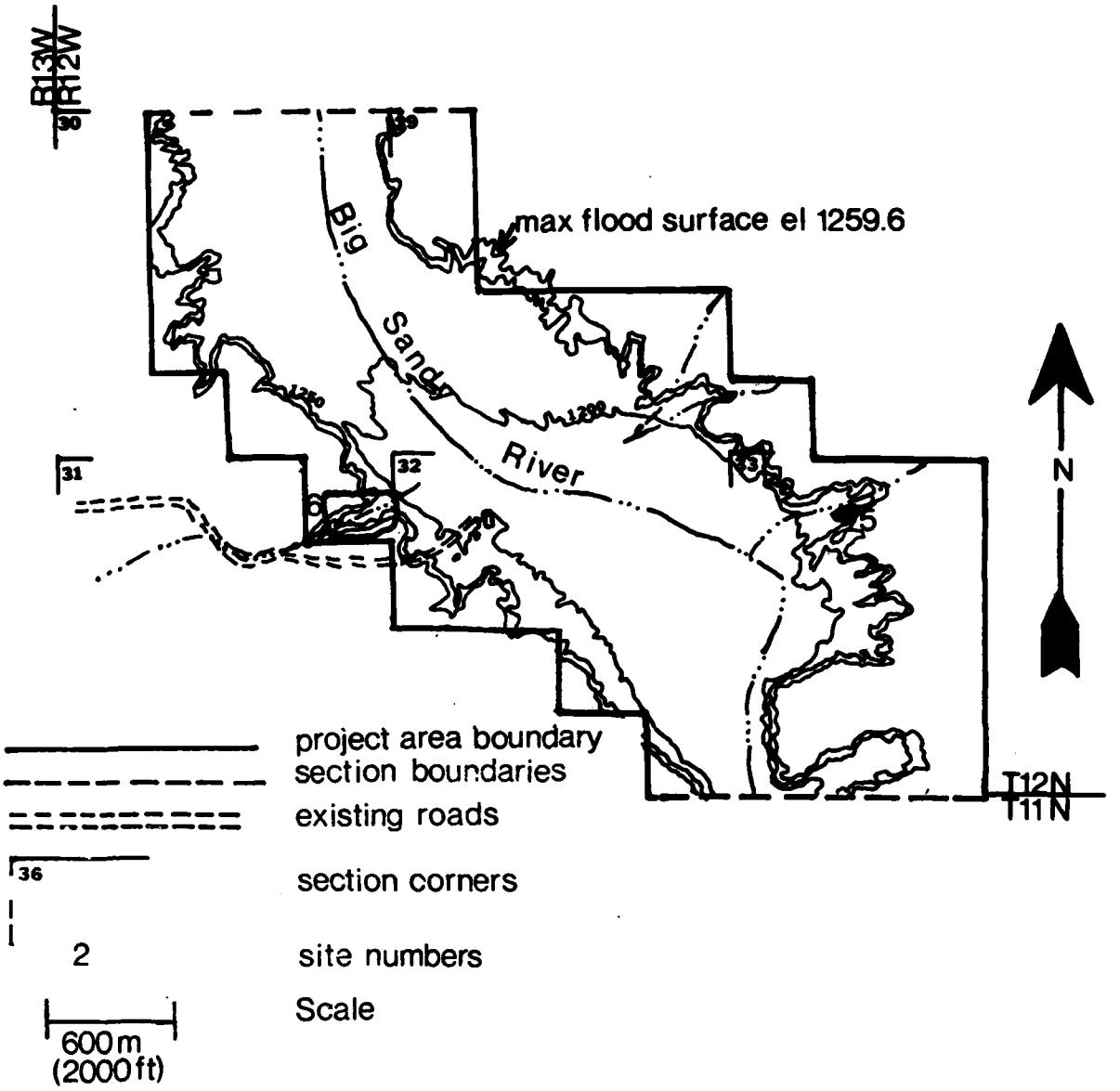

Fig. A-4. Locations of AZ M:10:5 and 6 (ASU).

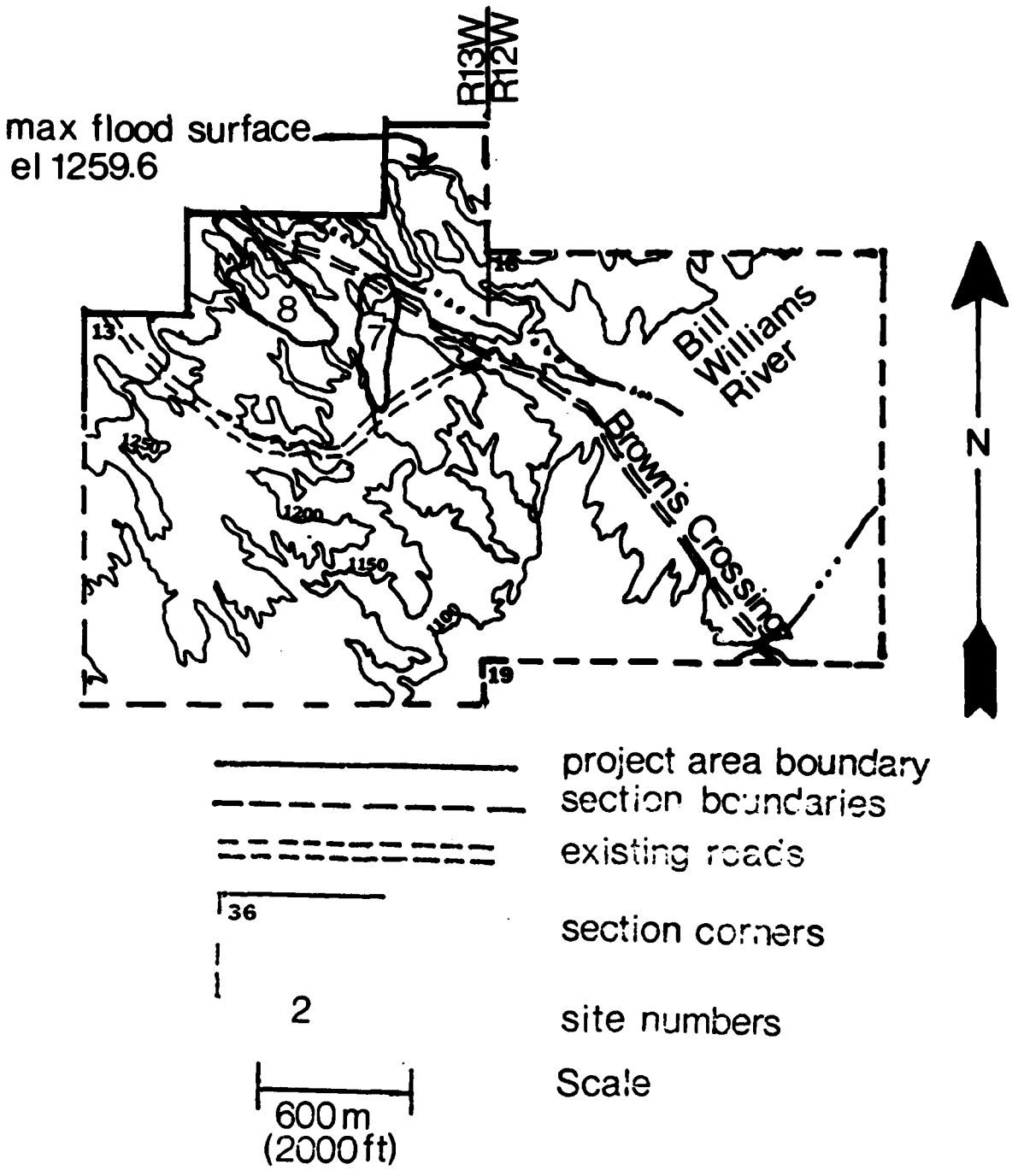

Fig. A-5. Locations of AZ M:10:7 and 8 (ASU).

Investigations should include site mapping and controlled surface collection of artifacts within a probabilistic random sample of the site area. No indication of subsurface features was found.

AZ M:10:8 (ASU)

Location: T.11N, R.13W, SE¼ of SW¼ of Section 12 and NW¼ of NE¼ of Section 13. The major portion of the site is located in Section 12 and extends into the NW portion of the ¼ x ¼ section in Section 13 (Fig. A-5).

Azimuths: N47°E to Santa Maria Peak
S21.5°W to eastern edge of Alamo Dam

Area: 75,000 m^2

The site is composed of a large, dense lithic scatter with associated features including 1 possible hearth and 3 rock rings. The site should be mapped in order to record areas of artifact density, relationships of features, and topography. Controlled surface collection should be carried out with a probabilistic random sample of the site area. Rock ring features should be mapped, photographed, and described in greater detail; these need not be excavated. The possible hearth feature should be excavated; if it is indeed a hearth, efforts should be made to preserve any available carbon or archaeomagnetic samples for dating purposes.

AZ M:10:9 (ASU)

Location: T.11N, R.12W, SW¼ of SW¼ of Section 20 and SE¼ of SW¼ of Section 20. The major site concentration is located along both sides of Alamo Road (Fig. A-3).

Azimuths: N22.5°W to Artillery Peak
N4°E to Santa Maria Peak

Area: 20,000 m^2

The site should be mapped, and surface collection should be based upon the establishment of a random sampling design. Although there is little indication of subsurface depth in the sleeping circle feature, test excavations would give information concerning depth of remains and the presence of any features within the structure. The sleeping circle feature should be thoroughly mapped and photographed.

AZ M:11:1 (ASU)

Location: T.11N, R.11W, SE¼ of SE¼ of Section 7, on the northern terrace of the Santa Maria River outside of Corps boundaries (Fig. A-6).

Area: 30,000 m^2

As this site is located outside of the project area, no specific recommendations will be given for further investigations.

AZ M:11:2 (ASU)

Location: T.11N, R.12W, SE¼ of SE¼ of Section 11. The site is located in the west central portion of the ¼ x ¼ section, on the northern terrace of the Santa Maria River (Fig. A-6).

Azimuths: S56°E to hill peak elevation 1525
S32°E to hill peak elevation 1435

Area: 8500 m^2

The site should be mapped, and features should be mapped in detail and photographed. Test excavations should be conducted in sleeping circle features in order to determine depth of cultural remains and the possible presence of any features within the sleeping circles. Sleeping circle Features 1 and 2 are similar in construction; this and their proximity may indicate contemporaneity. Feature 3 is located at a distance from Features 1 and 2, and it is constructed differently. Test excavations might yield further information regarding similarities and differences among these features. Controlled surface collection should be based upon probabilistic sampling.

General Discussion

Further investigations of the above sites would include appropriate laboratory analyses of recovered materials. Any additional indications of subsurface features associated with the above sites should be investigated by test excavations.

Preservation is generally preferable to investigation of archaeological sites, since they constitute non-renewable resources which are destroyed by excavation or surface collection. Preservation, however, may not be possible given planning considerations. In such cases, investigations should be carried out thoroughly and scientifically with reference to defined research objectives.

Most of the sites found in the Alamo sample survey area do not fall within that area designated by the Alamo Lake Master Plan (U.S. Army

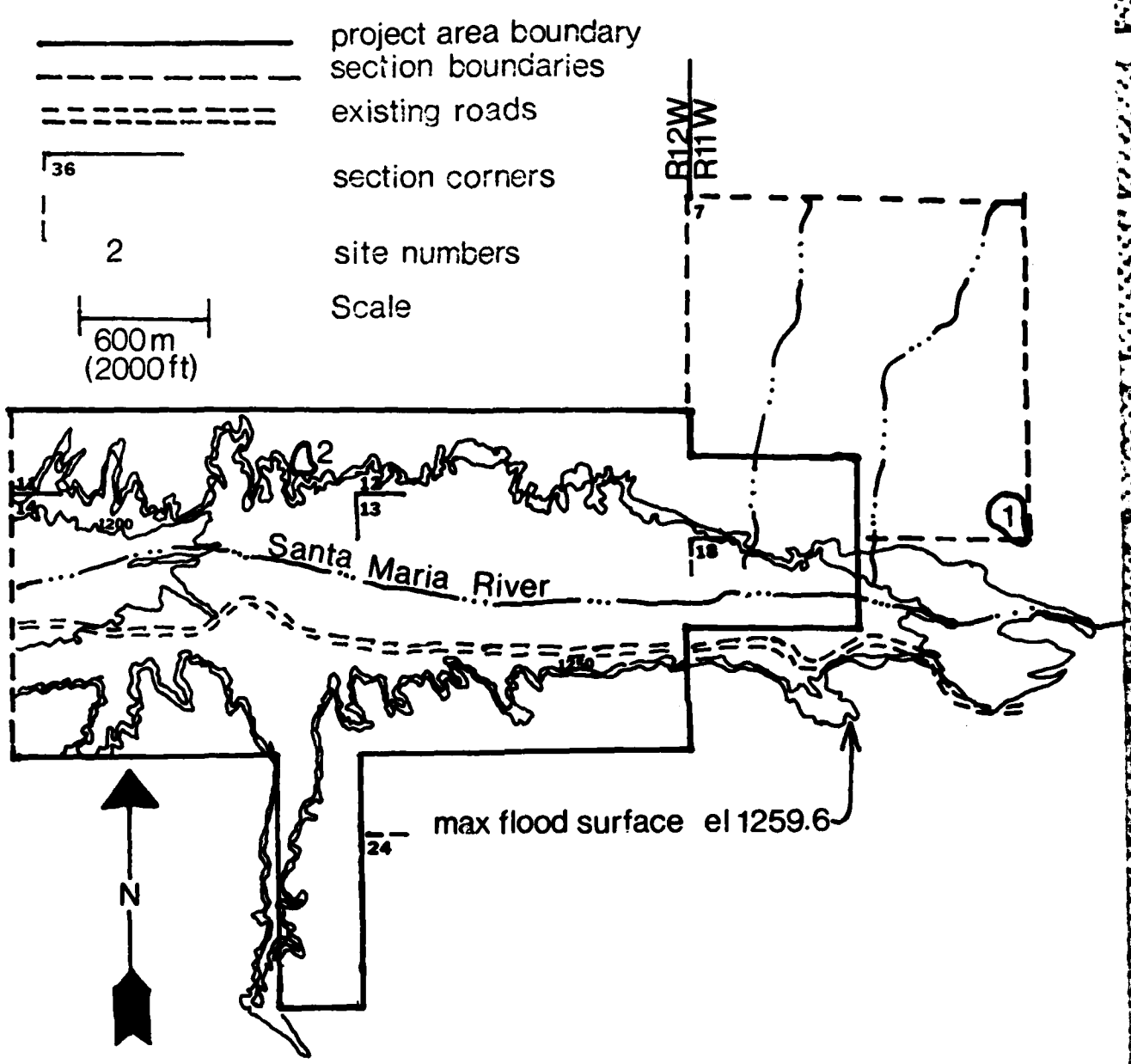

Fig. A-6. Locations of AZ M:11:1 and 2 (ASU).

potentially existing sites, intensive surveys should be conducted in planned construction zones, as well as in those areas already directly impacted by construction of existing facilities.

Construction of new recreational facilities will increase the potential of indirect adverse impacts to sites. Such impacts would be represented by the deterioration or destruction of sites due to increased human and vehicular traffic associated with the recreational use of Alamo Lake. Such impacts are likely to occur near the lake itself and near roads and recreational facilities. Although it is difficult to assess the nature and extent of potential indirect impacts, sites are very likely to occur in areas being impacted by recreational use.

Future cultural resource investigations will lead to a more comprehensive assessment of site locations and construction impacts. Such information will be useful in making planning decisions concerning development and in formulating research designs for investigating potentially impacted sites.

Recommendations for future surveys are based upon the probable locations of sites are determined from present survey results. As described within the main body of the report, most sites and isolated finds are located on river terraces; sample units located in terrace areas constituted approximately 50% of all units. A relatively smaller number of sites and isolated loci are found in rugged foothills, and cultural materials are quite rare in inundated areas and floodplains. The zone of rugged hills and mountain foothills can be divided into 2 areas based upon the occurrence of archaeological materials. Archaeological materials are extremely rare in the rugged foothills of the Buckskin and Rawhide Mountains south and west of Alamo Lake. However. the rugged hills rising from the Big Sandy River floodplain exhibit a density of materials nearly equal to that occurring on the terraces of the Bill Williams and Santa Maria Rivers, although Big Sandy materials tend more to be concentrated along large washes.

Since site locations are evidently related to particular topographical-environmental zones, the technique of stratified random sampling is recommended for the accomplishment of future surveys. According to Redman (1975:150), "stratification is particularly useful in situations where previous research had led to a basic knowledge of the structure of the archaeological remains to be investigated." In this case, the designation of sampling strata is based upon knowledge of variation in site locations with respect to environmental zones. In stratified sampling, the population is divided into separate groups or strata which are assumed to be internally homogeneous; these strata are then sampled independently of each other. Strata can be sampled with equal intensity, or they can be differentially sampled (Redman 1975:150).

In the Alamo project area, sampling strata could consist of the following: 1) river, inundated basin, and floodplain zones; 2) river terrace zones, including the hills bordering the Big Sandy River, with

Corps of Engineers 1975) as the focus of future development. None of these sites appears to be threatened by direct adverse impacts of construction or inundation. A few sites do, however, appear to be threatened by the indirect impact of recreational activities. Sites AZ M:10:1 (ASU) and AZ M:10:2 (ASU) are located near busy Cholla Road, along which future concession and campground construction is planned. Heavy use of this area constitutes a potential threat to these sites. Site AZ M:10:9 (ASU) is located along Alamo Road, and its sleeping circle feature is visible from the road. Such visibility could lead to unauthorized exploration of the site. Sites AZ M:10:7 (ASU) and AZ M:10:8 (ASU) are located near roads which provide access to the northern shore of the lake and thus are potentially threatened by human and vehicular traffic. Sites AZ M:10:5 (ASU) and AZ M:10:6 (ASU) are located on the Big Sandy, and AZ M:11:2 (ASU) is located near the Santa Maria. Two other sites, AZ M:10:3 (ASU) and AZ M:10:4 (ASU), are located near the eastern boundaries of Corps land. These latter 5 sites are located in areas which appear to offer little probability of adverse impacts resulting from recreational use of Alamo Lake, and thus preservation of them is feasible.

Site preservation strategies might involve the construction of fences; however, fences might tend to attract people rather than discourage them. Site AZ M:10:3 (ASU) would be protected by the placement of a 4-strand barbed wire fence which would prevent burros from disturbing the gravel pictograph. Given the site's location, such fencing would probably not attract curious people. The uniqueness and fragility of AZ M:10:3 (ASU) encourage the use of measures designed to insure its preservation. This site has some potential for public display. In general, information and materials obtained from these sites could be used to augment museum displays in the park administration building.

RECOMMENDATIONS FOR FUTURE SURVEYS

One of the primary purposes of the survey was to gain information upon which to base recommendations for further studies in the Alamo project area. The following recommendations are based upon the consideration of future recreational developments and upon an assessment of probable site locations.

According to the Alamo Lake Master Plan (U.S. Army Corps of Engineers 1975), recreational use of Alamo Lake for boating, fishing, camping, and hiking activities is expected to increase steadily, particularly with the development of new facilities. Construction of such facilities as campgrounds, picnic sites, trails, and parking areas will generally be concentrated around the southern part of the lake and in the vicinity of Alamo Dam. Facilities have already been built in this area. Most of these facilities are, or will be, located in rugged foothills which have contained few archaeological remains. Thus, it appears to be unlikely that future construction will adversely impact cultural resources. However, since such construction would constitute direct adverse impact to

the exception of the rugged area surrounding Santa Maria Peak; and 3) rocky, rugged uplands, primarily consisting of the foothills of the Buckskin and Rawhide Ranges (Fig. 3). On the basis of past information on site locations, one would expect most materials to occur in Stratum 2 and very few materials to occur in Strata 1 and 2. It would be logical to sample Stratum 2 more intensively than the others. An alternative strategy might involve the division of Stratum 2 into 3 separate strata based upon the 3 rivers. In order to emphasize areas most likely to be directly or indirectly impacted by Alamo construction activities, a larger relative sampling percentage could be drawn from the terraces of the Bill Williams River. Particular sampling percentages and types and sizes of sampling units would be determined by the archaeologist conducting the survey. Areas specifically designated for construction activities should be surveyed as completely as possible, regardless of their inclusion or non-inclusion in a regional sampling design.